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hCOLAI PRO MA - - - - - HYITELCMVILVILLONSVLAE 23
Co9alpm MK - - - - - TCWKIPVFFVGSFHEP WASAAVKRR 28
Coll9alpm MRLTGPFWFL - - - - - WLWMSIFILL - - - - - ASTSVTV 27

hCOLAI PRO DGEVRS SCRTAPT DVFILDGSY SVGPENF 33
Co9alpm PRFPVNS NSNGNBLCPKIRI G - QDDPGE 37
Coll9alpm DK - - - - - TRES CPILIRI E - GHQIT - Y 46

hCOLAI PRO EIVKKWL VNI TKNFDI GPKFI QVGVV QYSD 83
Co9alpm DLSQFQVD - - - - - KAASRRRAI QRVVG: AT 82
Coll9alpm ENNRLEVS - - - - - GFILGDSFSLRFAFCESD 73

hCOLAI PRO FVLEIPLGS YDSGEHLTAAVES I - LV LGG 112
Co9alpm LQV - - - - - AVKLGNNVDFRI PARNFN - - - 103
Coll9alpm NT - - - - - CFILGSA LLIR - - - - - TIKIF - - - 92

hCOLAI PRO NTETGKAIQFALDYI EAKSS FTLTIAVVL 142
Co9alpm - - - - - PGLDBEVS FLTTFRMTOST LKKNVNI 131
Coll9alpm - - - - - PGLDBEVS VAA MTRVRNAKKE R WFLW 120

hCOLAI PRO TDGKS QDDVKDAAQAARD IITLFAIGVGS 172
Co9alpm QIQDS GKEQVGTI NGOTQS VFSY - - - 137
Coll9alpm QVLNQGNIPGIS IVVDGSKRVVEFMF - - - 146

hCOLAI PRO ETEBAEIAIANKPSS YVVFYVEDYIAISK 202
Co9alpm KOLDGSLQTAAESN - - - - - SSLEPDS OWHRI MI 185
Coll9alpm QATEGDLVYIERNRRTTRPUPDR QWHRLGT 176

hCOLAI PRO IREVMKQKFEESVOPTRI DVAARDE - - - R 229
Co9alpm GVERSSATFAVDGHA ESLMIKPGPI DID 215
Coll9alpm SIQS QVIS YNDGHL LARRQTDE KDTVDFH 206

hCOLAI PRO GEDILLOQDVNKKKRIQSPKIKGYEV 239
Co9alpm GRAVLGKPADNPGMS VPFIHQWMLIHCDPL 245
Coll9alpm GRTVIATRASDSM - - - - - PVDIIRHQLKIYGSAN 235

hCOLAI PRO TS KVDLS - ELTSNFPN - - - - - GLFPSTVF 283
Co9alpm RFRRETICHEPARTESO - - - - - 263
Coll9alpm ITAQETICETISDTKREODOFONIAS SWVT 265

hCOLAI PRO VSTQRYK - YKKIWDW - - - - - RILTIDGRPQ 308
Co9alpm - - - - - 263
Coll9alpm AHASKMYSYLP AKLEKDPQCCIPNKGEAG 295

hCOLAI PRO IAVILNGVDKILLFTTAVINGSDVVTAN 338
Co9alpm - - - - - ITDERGPPGEGGPPGASGPFGVPGIDG 220
Coll9alpm IFGAPQSPGQKHKEZPGENLHGAHOPFG 323

hCOLAI PRO PQVXILFDEGWHQJRLLVTHODVTLYIDDO 368
Co9alpm IDG - - - - - DRGPKGPPGPPGPA GEPGKPSAP 316
Coll9alpm QKG - - - - - EQGFEGSKGETGHEGEGGEGKGGP 351

hCOLAI PRO CIENKPLEPVLGILINOQTQILCKYSGL EBT 398
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Coll9alpm ALACLNGENGLKGVLGPHGPPGKNGERCDT 381

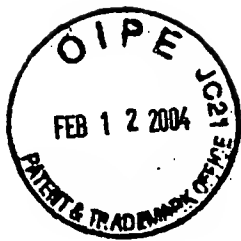
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Coll9alpm GPFGPPAPPGSLGTQGPQGPFGKKGORRGR 411

hCOLAI PRO CLNGPSSDVOSTIACICPPGKPG - - - - - 449
Co9alpm GRVGLVGDGRRRGH - NODPGFPGPROI GF 404
Coll9alpm GKTGTPGKPGPGPGH - DGPFGI QGSIHQHSGO 440

hCOLAI PRO - - - - - LQGPFGDUGLPGNP 463
Co9alpm HD - - - - - GDPLCPNACPPGRSGYDGLDGR 429
Coll9alpm DPNKDNKGNDEHEAGGLKGDDEGETGLDGP 470

FIG. 6A

delete Delete



hCOLA1 PRO GYPGQPGGDDCKPFC- - - - - 476
CoPatent CHKGAAGGI GEPGRQGHKGEH GQQGBLGEV 459
CollPatent GS VGPRGGCKGEPGE FTTKGEK GDRGE FGV 500

hCOLA1 PRO - YQGIAGTPEGVPGSPGIQGARGLPFGYKGEPP 503
CoPatent GAAGGP- - - - - PGAQGLRGIT GIVGDDKGEK 483
CollPatent GS QGVKGEPEGDPGEPPIGI ESF GIKGQQGSA 530

hCOLA1 PRO GRDGDGKGDRLPLPGFPGHGMPCSKGEMCAK 535
CoPatent GARGLDGEPEGPGQLPGA- - - PGDGGQRG- 508
CollPatent GSMGPRGPGPGDVGLPGEGHGI PGKGGIKGEK 560

hCOLA1 PRO GPKGS- - - PGFYGKKGAKGFKGNA- - - 536
CoPatent - - - - - PGGEAGGKGDRA- - - 521
CollPatent GGPGGIIGPPGLPGPIRGZAGFPFGKSLPGEP 590

hCOLA1 PRO - - - - - GFGPLPGHAGE- - - PGRHGGKGLM 577
CoPatent - - - - - PGARGI PGLPGHGGDTGLHGGVDRGG 547
CollPatent GLDGNPGAGPRGPRGGKGRGHPGGVHGSPGDI 620

hCOLA1 PRO GSPGF- - - - - KGEAGSPGAPGQDGTRE 599
CoPatent - - - - - IPGMPGTGGEFGKPGPGDAGI QG 571
CollPatent GPGQGI GTPGRTGAQGYAGEPGI QGPRGLP 650

hCOLA1 PRO EPGIPGFPNGRGLMGKGEIGFPGQGGKKG 629
CoPatent LRGVNGI MGAKSVAGZRGSTGAPGKPGQ 599
CollPatent LRGTPGTPNGTGVVPGRDGKPGGLPGPPGDP 680

hCOLA1 PRO A- - - - - - - - - - - PGMPGLMGSN 640
CoPatent - - - - - - - - - - - PGHGS 603
CollPatent ALPLLGDI GADLKNFCGNCQASV PGLKSN 710

hCOLA1 PRO GSPGGPGTGG- - - - - - - - - - - 650
CoPatent GKGGGQZPG- - - - - - - - - - - 624
CollPatent GZEGGAGEPGKYDAMARKGDI GPRGPPGI 740

hCOLA1 PRO - - - - - PGSGHGERPGI GMPGASGLKGEPPGAT 676
CoPatent GSRGELGPGVGS PGLHGLKGLS LGS PGLHGLP 654
CollPatent GRZSPKGSIRGERGYPGI PGKKGDRGLQGI 770

hCOLA1 PRO GSPGEPGPGYMLPGPIQGGLGDKENQGEKGIQ 706
CoPatent GTPGLVGMKGDRGVVGE- - - - - EPGPKGROGAS 681
CollPatent GTPGA PGPTTPPGLMGRTGHPGTTGARGEK 800

hCOLA1 PRO GQKGENGRQGTGPGQQGIQ- - - - - 724
CoPatent GEPGEAGEERGELEDIGLP- - - - - 699
CollPatent GSDGPPGKFGPTGPPGTPP- - - - - R-NGMSLYK 830

hCOLA1 PRO - - - - - - - - - - - GHHGAKGTRGKKGHGG 740
CoPatent - - - - - - - - - - - GRKGAAGNFGEPG 712
CollPatent IKGGVNVP SYPGFP GTPGPHGDRPRVGGHGG 860

hCOLA1 PRO VRCAIGSKKESGVDDGLMGVAGT KQPGGLG 770
CoPatent LRGPZGSRGLPGVEGFRGPPGGERGVQGEQG 742
CollPatent AMGLFGLGEGPGVKGDRTGAGTFAAGMSG 890

hCOLA1 PRO PQGPGLDGKPGREFSZGFIROVCTDVIR 800
CoPatent ATGLPGVQGP PGRAPTDGHKGVCMVITQE 772
CollPatent KPGAGPGPPGVPGEPGERGPVGGDIGFPFEG 920

hCOLA1 PRO QLPVLLQSGR- - - - - IRNCDHCLSQHSGPGAPG 828
CoPatent HFAZMAASLTPRPGSGATGLPGRPGPGHGG 802
CollPatent PSGKPGI NGSDGTPGAGSI MGKPSDARGHGG 890

hCOLA1 PRO P- - - - - PGPIGPEGFRGLLGGTPARDGVPG 832
CoPatent PPGENGFPGQMGIRG- - - - - LPSIKGPGPG 802
CollPatent ERGDQGI PGDRGSGQGEKGKPGTGMKGAI 982

FIG. 6B

Delete



hCOLA1 .PRO LVGVPGRPVRLKGLPGRNGEKGSQGF . . 880
Col9a1.pro ALGLRGPKGGDLGEEKGERGPPGR 848
Col19a1.pro PMGPPGNGKGS MGS P D HQGPPGSPGI PGIP A 1010
hCOLA1 .PRO 880
Col9a1.pro 848
Col19a1.pro DAVSFEEIKKYINQEVLRIFEERMAVFLSQ 1040
hCOLA1 .PRO 894
Col9a1.pro 862
Col19a1.pro LKPAAMLAAQAYGRPGPPGKDGLPGPPGD 1070
hCOLA1 .PRO ECGGISKEGP PGDPGLPG 913
Col9a1.pro PCPASVGMNCRDGERGPPG 881
Col19a1.pro PCPQSY RGGKGERGEPGIGLPGSPGLPG 1098
hCOLA1 .PRO KD GDHGKPGILOGGPPPGICDPFLC 938
Col9a1.pro LAGIPGVPGPGPPGLPGFCEPASCC 906
Col19a1.pro TSALGLNGSPGAPGPGPPGPPSGRGNPE D 1128
hCOLA1 .PRO FSVIARRRFFRKCPNY 954
Col9a1.pro TMLVSEHLTKGLTLERLTAAWLSA 931
Col19a1.pro LYPVSH.AHRRTG GN 1142

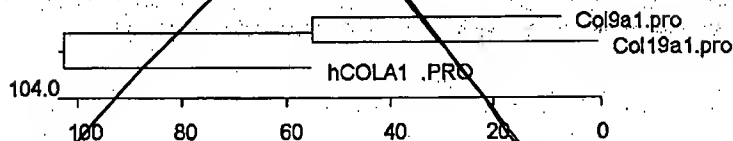


FIG. 6C

delete Delete

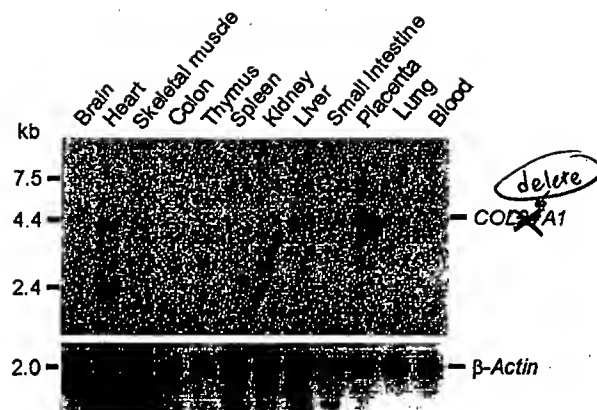
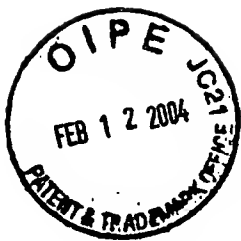


FIG. 7A

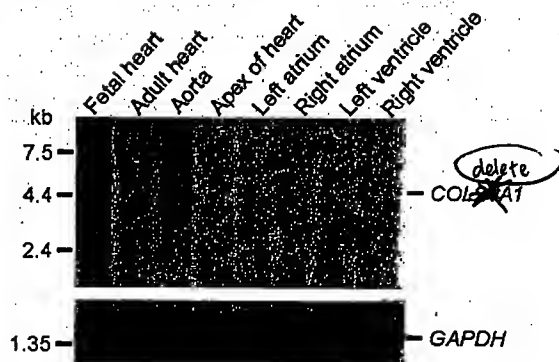


FIG. 7B

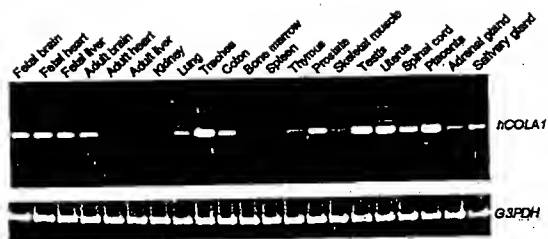


FIG. ~~8~~
7



add a mark
hCOLA1

FIG. ~~A~~
8



FIG. ~~B~~
8



add a mark
hCOLA1

FIG. ~~C~~
8

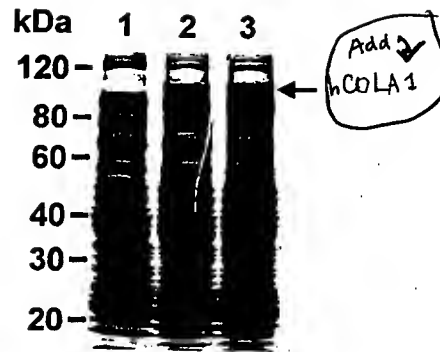
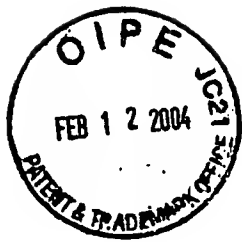


FIG. ~~10~~A
9

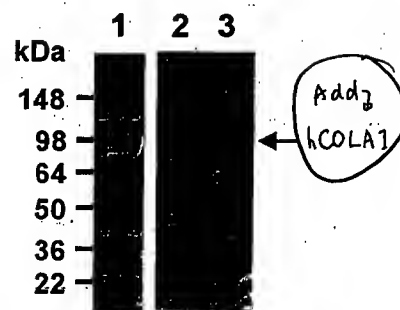


FIG. ~~10~~B
9



hCOLA1 - +

bp
10,000
8,000
6,000
5,000
4,000
3,000
2,000
1,500
1,000
500



add a mark
← hCOLA1

FIG. ~~IX~~
10